

Clinical Case Study: Comparative Evaluation of Dashanga Lepa and Z-Paste in the Management of Vranshotha (Cellulitis)

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ABSTRACT

Introduction: Cellulitis is a diffuse inflammatory condition affecting the subcutaneous tissues and fascial planes, which may involve either superficial or deep structures. In Ayurveda, cellulitis can be correlated with Vranashopha. Acharya Sushruta emphasized the significance of Vranashopha, describing it as a localized swelling involving Twak and Mamsa Dhatu, and considered it the preliminary stage of Vrana.

Aim: To evaluate the effectiveness of Ayurvedic and modern treatment modalities in the management of Vranashopha.

Materials and Methods: Case A: A 48-year-old male, apparently healthy 12 days prior to presentation, gradually developed pain and swelling over the dorsum of the right leg, associated with itching and blister formation. The patient was treated with Dashanga Lepa. Case B: A 55-year-old male, apparently healthy 15 days prior to presentation, presented with pain and swelling of the left foot of 15 days' duration and was managed with Z-paste application.

Results: Both cases demonstrated significant clinical improvement, with marked reduction in pain and swelling following treatment.

Discussion: Dashanga Lepa, a classical Ayurvedic formulation recognized for its anti-inflammatory properties. Z-paste, containing zinc oxide and glycerol, possesses antibacterial properties, reduce inflammation. The favorable outcomes observed in both cases suggest the potential effectiveness of these treatment modalities in the management of cellulitis.

INTRODUCTION

Cellulitis is spreading inflammation of the subcutaneous tissue and fascial tissue which is usually caused by bacterial infection like streptococcus pyogenes, staphylococci pyogenes and gram-positive organism. The organism on skin and its appendages gain entrance to dermis and multiply to cause cellulitis¹. Cellulitis has incidence rate of 24.6/1000 persons-years, a higher incidence of cellulitis in males of all ages and that most cellulitis cases (78%) received treatment in outpatient settings. Lower extremity was the most common site of cellulitis among both males and females². Cellulitis is common in diabetes, immunosuppressed people and old age. The condition starts with redness, itching and stiffness at the site of inoculation. Part becomes brawny and edematous and pitting pressure. cellulitis leading to suppuration, sloughing or even gangrene formation³. Cellulitis treated with antibiotics, anti-inflammatory, antipyretic, analgesic, limb elevation and glycerin magnesium sulphate dressing⁴. Vranashopha can be associated with cellulitis. Acharya Sushruta defined Shopha as localized swelling involving skin and the underlying flesh. Acharya Sushruta elaborately described the consistency, classification, clinical features, complications, and management of Vranashopha. According to Ayurvedic principles, the vitiated Vata Dosha displaces Kapha, Pitta, and Rakta, causing their accumulation between Twak (skin) and Mamsa (muscle tissue), ultimately resulting in the development of Shopha (swelling). Vranashopha is classified into three progressive stages, namely Ama Avastha, Pachyamana Avastha, and Pakwa Avastha, and is further categorized into six distinct types. Furthermore, Sushruta described three varieties of Lepa that are effective in alleviating Shopha (swelling) and Vedana (pain)⁵.

According to Sushruta, Alepa is particularly beneficial in Avidagdha Shopha, as it helps relieve Daha (burning sensation), Kandu (itching), and Peeda (pain)⁶. In the present cases of Vranashopha (cellulitis), Dashanga Lepa, known for its anti-inflammatory and antimicrobial properties, and Z-Paste, containing zinc oxide and glycerol with wound-healing and antibacterial effects through its hygroscopic action, were utilized as topical treatment modalities.

CASE REPORT

Case A (Dashanga Lepa)

Chief Complaints:

A 48-year-old male patient presented with complaints of pain and swelling over the dorsum of the right foot, accompanied by itching, blister formation, and intermittent fever for the past 10 days.

History of Present Illness

A 48-year-old Muslim male, employed as a laborer, with no known history of diabetes mellitus, hypertension, thyroid disorders, or any other systemic illness, presented with pain, swelling, and itching over the dorsum of the right foot. The symptoms had persisted for six months, during which he sought treatment from a local medical practitioner and received medications; however, no significant improvement was observed. Over the preceding 10 days, the condition worsened, characterized by increased pain, swelling, erythema over the dorsal aspect of the right foot, and intermittent episodes of fever. Subsequently, the patient reported to the Department of Shalya Tantra, LRP Ayurvedic Medical College and Hospital, for further management.

Past History:

The patient had no known history of diabetes mellitus, hypertension, thyroid disorders, or any other significant comorbid conditions.

Family History:

No significant family history relevant to the present illness was reported.

Ashtavidha Pariksha:

- Nadi: Prakrita, Hamsa Gati
- Mala: Prakrita, regular bowel habits with once-daily evacuation
- Mutra: Prakrita, frequency of 5–6 times per day
- Jihva: Lipt (coated)
- Shabda: Prakrita
- Sparsha: Anushna Sheeta
- Drik: Prakrita
- Aakriti: Madhyama

General Examination

Personal History:

- Diet: Mixed diet
- Appetite: Good
- Bowel Habits: Hard stools, twice daily
- Micturition: No burning sensation; frequency 4–5 times per day
- Sleep: Sound and undisturbed
- Habits: History of tobacco chewing and alcohol consumption for the past 10 years

Vital Parameters:

- Blood Pressure: 120/80 mmHg
- Respiratory Rate: 18 cycles/minute
- Pulse Rate: 72 beats/minute
- Body Temperature: 99.8°F

Systemic Examination:

- CVS: S1 and S2 heart sounds were heard clearly; no murmurs detected.

- RS: Bilateral equal air entry was present with normal vesicular breath sounds.
- P/A : Abdomen was soft and non-tender with no evidence of organomegaly.

Local Examination of the Right Lower Limb:

- Diffuse swelling was observed over the dorsum of the right foot and lower leg.
- Erythema was present over the distal one-third of the anterior aspect of the right leg and the dorsum of the foot.
- Multiple blisters were noted over the dorsum of the right foot.
- Hyperpigmented, scaly, pruritic maculopapular lesions were observed over the anterior aspect of the proximal one-third and the lateral aspect of the distal one-third of the right leg and foot.

Palpatory Findings:

- Size of swelling: As documented in Table 1.
- Tenderness: Present over the right leg and foot.
- Local Temperature: Raised (++)
- Peripheral Pulses: Dorsalis pedis and posterior tibial arterial pulsations were palpable and normal.
- Neurovascular Status: No distal neurovascular deficit was detected.
- Capillary Refill Time: Less than 2 seconds.

Investigations:

- Hemoglobin (Hb): 11.2 g/dL
 - Random Blood Sugar (RBS): 85 mg/dL
 - ESR: 118 mm/hour
 - Serum Creatinine: 1.4 mg/dL
 - Platelet Count: 1.10 lakh/cu mm
 - Total White Blood Cell Count: 10,500 cells/cu mm
 - HIV: Non-reactive
 - HBsAg: Non-reactive
 - HCV-Non- reactive
- Diagnosis- Vranshotha

Treatment:

Dashanga lepa of required quantity was taken and ½ spoon of Haridra churna was added to the churna then mixed with Luke warm water, wait for the Lepa to dry later Lepa was washed with Luke warm water later Yasti Madhu tail applied and dressing done.

Dashanga lepa + haridhra churna BD (figure-1).

Oral medication:

Manjistadi Kashaya 10ml TID
Punarnavadi kahsya 10ml TID
Arogyavardhini vati 1 TID BF
Gokshuradi guggulu 1 BD AF
Sudharshana ghana vati 1 sos AF
CASE -B (Z Paste)

Chief complaint:

A male patient of 55year complaints of pain and swelling in left foot since 15 days.

History of present illness:

A 55 year male patient, Hindu, farmer, not a K/C/O DM, hypertension, thyroid and no other co-morbidities complaints of pain and swelling in left foot since 10 days with no other past history like fever, nausea, vomiting, cold, cough etc, and not undergone any surgical intervention came with above

said symptoms for management of swelling.
History of past illness:
N/K/C/O DM, Hypertension, thyroid disorder or any other comorbidities.
Ashtvidha pareeksha:
Nadi: Prakrita.
Mala: Prakrita, regular once day.
Mutra: Prakrita, 6-7times/day
Jihva: Alipta
Shabda: Prakrita.
Sparsh: Anushnasheeta.
Drik: Prakrita.
Aakriti: Madhyama.
Examination of patient:
Personal history:
Diet: vegetarian
Appetite: good
Bowel: clear, 1 t/day
Micturition: no burning, 4-5 times/day
Sleep: sound
Habits: no any habits

Vitals:

Bp- 120/80 mmhg
Respiratory rate: 18cpm
Pulse rate: 82bpm
Temperature: 99.8 F

Systematic examination:

CVS: S1 S2 Heard, no murmurs.
RS: Equal air entry B/L lungs field
P/A: Soft, Non tender
Examination of foot:
Swelling over the dorsum of left leg and foot.
Redness over 1/3rd of left leg.

Palpation:

Size (mentioned in table-2).
Tenderness ++ over dorsum of left leg.
Raised temperature+.
Dorsalis pedis and posterior tibial artery well felt.

Investigation:

Hb: 10 mg/dl
RBS: 88.00mg/dl.
ESR: 19mm/hr
Serum creatinine: 1.2mg/dl
Platelet count: 2.05 lakhs/cu mm
WBC count: 10,000 ells/cu mm
HIV – non reactive
HBSAG- non reactive
HCV- non reactive.
Diagnosis: Cellulitis.

Treatment:

Z paste(table-5) dressing was continued for 3 days

Oral medication:

TAB. Zifi CV BD
Tab. Pan 40 mg OD
Tab . Lysoflam BD

DISCUSSION

Early intervention in Vranashopha is essential to prevent disease progression and minimize tissue damage. Acharya Sushruta has described stage-specific management strategies for Vranashopha under Saptopakrama Chikitsa. Acharya Sushruta emphasized that timely elimination of the vitiated Doshas during their stage of accumulation can effectively prevent the advancement of the disease to subsequent stages. Therefore, early diagnosis and prompt therapeutic intervention play a crucial role in the successful management of Vranashopha and in preventing complications associated with tissue destruction and suppuration.

In Case A, Dashanga Lepa was applied as a topical therapeutic intervention. The formulation is predominantly characterized by Kashaya (astringent), Tikta (bitter), Katu (pungent), and Madhura (sweet) Rasa and possesses properties such as Utsadana, Ropana, and Vrana Shodhana. According to Ayurvedic principles, Alepa is considered beneficial in the management of Avidagdha Shopha. Additionally, it promotes Twak Prasadhana, Mamsa Prasadhana, and Rakta Prasadhana, thereby facilitating tissue healing and restoration.

In Case B, Z-paste, comprising zinc oxide and glycerol, was employed as the topical treatment modality. Zinc oxide is recognized for its wound-healing, anti-inflammatory, and antimicrobial properties. Glycerol provides a soothing and emollient effect, enhancing skin hydration and comfort. Furthermore, zinc oxide forms a protective barrier over the affected area, promoting tissue repair while preventing further irritation and secondary infection.

CONCLUSION

Acharya Sushruta has comprehensively described the management of Vranashopha at various stages of its progression. The application of Lepa plays a crucial role in mitigating the vitiated Doshas and controlling the inflammatory process. When administered during the early stage of Shopha, Lepa aids in Dosha elimination and prevents disease progression, thereby reducing the likelihood of transformation into Vrana. Similarly, Z-paste exerts anti-inflammatory and wound-healing effects, primarily attributable to the therapeutic properties of zinc oxide.

In the present study, Dashanga Lepa was applied for seven days in Case A, whereas Z-paste was administered for three days in Case B. Although the severity and duration of cellulitis were greater in Case A, as evidenced by the extent of swelling and longer disease duration, both treatment modalities resulted in significant clinical improvement. Based on the observed outcomes, it may be inferred that Dashanga Lepa and Z-paste are comparably effective in the management of cellulitis and can serve as beneficial therapeutic options for reducing inflammation and promoting recovery.

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Table-1 Measurement OF CASE – A

	Before treatment	After treatment
Mid-calf	35 cm	34 cm
Mid-foot	28 cm	26 cm
Ankle	26 cm	24 cm

	Before treatment	4 th day	After treatment
Mid-calf	35 cm	35 cm	34 cm
Mid-foot	28 cm	27 cm	26 cm
Ankle	26 cm	25 cm	24 cm

Table-2 Measurement of case –B

	Before treatment	After treatment
Mid-calf	34 cm	32 cm
Mid-foot	25 cm	24 cm
Ankle	25 cm	24 cm

Table -3 Time period for both cases

TREATMENT	DAYS
Dashang lepa (case-A)	7 DAYS
Z- paste (case –B)	3 DAYS

SR. NO	Ingredients	Latin name	Family	Part used	Proportion
1	Shirisha	Albizia Lebeck Benth.	Fabaceae	Root	1 part
2	Madhuyashti	Glycyrrhiza glabra Linn.	Fabaceae	Root	1 part
3	Raktachandana	Pterocarpus santalinus Linn.	Fabaceae	Heart Wood	1 part
4	Tagara	Valeriana Wallichii DC.	Valerianaceae	Root	1 part
5	Ela	Elettaria cardamomum maton	Zingiberaceae	Seed	1 part
6	Haridra	Curcuma Longa Linn.	Zingiberaceae	Rhizome	1 part
7	Daruharidra	Berberis aristata DC.	Berberidaceae	Stem	1 part
8	Jatamansi	Nardostachys Jatamansi DC.	Caprifoliaceae	Rhizome/ root	1 part
9	Kushta	Saussurea lappa C.B	Asteraceae	Root	1 part
10	Hribera	Pavonia odorata wilid	Malvaceae	Root	1 Part

Table No – 5 Composition of Z- paste

1.	Zinc oxide
2.	Glycerol



BEFORE TREATMENT- 1ST DAY



AFTER TREATMENT – 7TH DAY



BEFORE TREATMENT 1ST DAY



APPLICATION OF Z-PASTE 1ST DAY



AFTER TREATMENT – 3rd DAY